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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,888	01/17/2002	Sridhar Sadasivan	83557WRZ	7932

7590

10/07/2003

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EXAMINER

DO, AN H

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 10/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/051,888

Applicant(s)

SADASIVAN ET AL.

Examiner

An H. Do

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 17 January 2002 was filed and is being considered by the examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 11-23 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sievers et al (US 5,639,441) in view of Coulter (US 3,457,949).

Sievers et al discloses a method and apparatus of printing comprising the following claimed features:

-a printhead for delivering a solvent free marking material to a receiver (Fig 3, element 52; column 4, lines 7-9); a discharge device (Fig 1, element 24) having an inlet and an outlet, a portion of the discharge device defining a delivery path, a portion of the discharge device being adapted to be releasably connected to a pressurized source (Fig 1, elements 10, 14) of a thermodynamically stable mixture of a fluid and a marking material at the inlet, the discharge device being configured to produce a shaped beam of the marking material, the fluid being in a gaseous state at a location beyond the outlet of the discharge device (Fig 1, 20, 22; column 11, lines 44-67; column 12, lines 15-36);

-the pressurized source includes an inlet adapted to receive the marking material (Fig 1, element 30);

-a receiver positioned on a surface of the receiver retaining device (Fig 1, element 24); and

-the second material is an organic/inorganic material, overcoat and precoat material (columns 5 and 6).

Sievers et al discloses the claimed invention except for reciting the following features:

-an actuating mechanism positioned along the delivery path, the actuating mechanism having a first position removed from the delivery path and a second position in the delivery path, and having the open position and a closed position; and

-the discharge device includes a variable area section, a constant area section, a first variable area section connected to one end of a first constant area section, and a second variable area section connected to another end of the first constant area section

Coulter teaches the following features:

-an actuating mechanism positioned along the delivery path, the actuating mechanism having a first position removed from the delivery path and a second position in the delivery path, and having the open position and a closed position (Fig 1, element 54); and

-the discharge device includes a variable area section (Fig 1, element 40), a constant area section (Fig 1), a first variable area section connected to one end of a first

constant area section, and a second variable area section connected to another end of the first constant area section (Fig 1, element 40; columns 1-6).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Matsumoto et al into the invention of modified Sievers et al. The motivation for the skilled artisan in doing so is to gain the benefit of having dimensions adequate for proper discharging and proper sealing when the need arises.

4. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sievers et al (US 5,639,441) in view of Coulter (US 3,457,949), as applied to claims 1-5, 11-23 and 27-30 above, and further in view of Shrivastava et al (US 5,461,401).

Sievers et al, as modified, teaches all limitations of the claimed limitation except for reciting the actuating mechanism includes a solenoid actuating mechanism and is actuatable at a plurality of frequencies.

Shrivastava et al teaches the actuating mechanism includes a solenoid actuating mechanism (solenoid valve; abstract; column 1, lines 48-58) and is actuatable at a plurality of frequencies (abstract; column 1, lines 48-58).

It would have been further obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Shrivastava et al into the invention of modified Sievers et al. The motivation for the skilled artisan in doing so is to gain the benefit of providing a valve which can regulate the flow of material being discharged through the nozzles and allowing the valve system to obtain higher operating frequencies (abstract).

5. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sievers et al (US 5,639,441) in view of Coulter (US 3,457,949), as applied to claims 1-5, 11-23 and 27-30 above, and further in view of Mychajlowskij et al (US 6,348,561 B1).

Sievers et al, as modified, teaches all limitations of the claimed limitation except for reciting the marking material is an ink, a dye and a pigment.

Mychajlowskij et al teaches the marking material is an ink, a dye and a pigment (Column 3, lines 62-67).

It would have been further obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Mychajlowskij et al into the invention of modified Sievers et al. The motivation for the skilled artisan in doing so is to provide an excellent colorant dispersion and high projection efficiency as noted in column 1 lines 50-51 of Mychajlowskij et al.

6. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sievers et al (US 5,639,441) in view of Coulter (US 3,457,949), as applied to claims 1-5, 11-23 and 27-30 above, and further in view of Temple et al (US 6,228,311 B1).

Sievers et al, as modified, teaches all limitations of the claimed limitation except for reciting the collimated beam, focused beam and diverging beam.

Temple et al teaches the collimated beam, focused beam and diverging beam (Figure 1; Column 4, lines 45-56).

It would have been further obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Temple et al into the invention of modified Sievers et al. The motivation for the skilled artisan in doing so is to

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split high energy beam into sub-beams in order to achieve less variation in the angle of divergence of the combined beam as noted in column 2 lines 13-27 of Temple et al.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Peeters et al (US 6,116,718) discloses a printhead device having multiple channels for directing propellant and marking material being mixed before marking on the substrate. Jagannathan et al (US 6,471,327 B2) discloses an apparatus and method for delivering a functional material via the discharge device having an outlet and inlet.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to An H. Do whose telephone number is 703-308-0525. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on 703-308-4896. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



AD
September 25, 2003



Stephen D. Meier
Primary Examiner